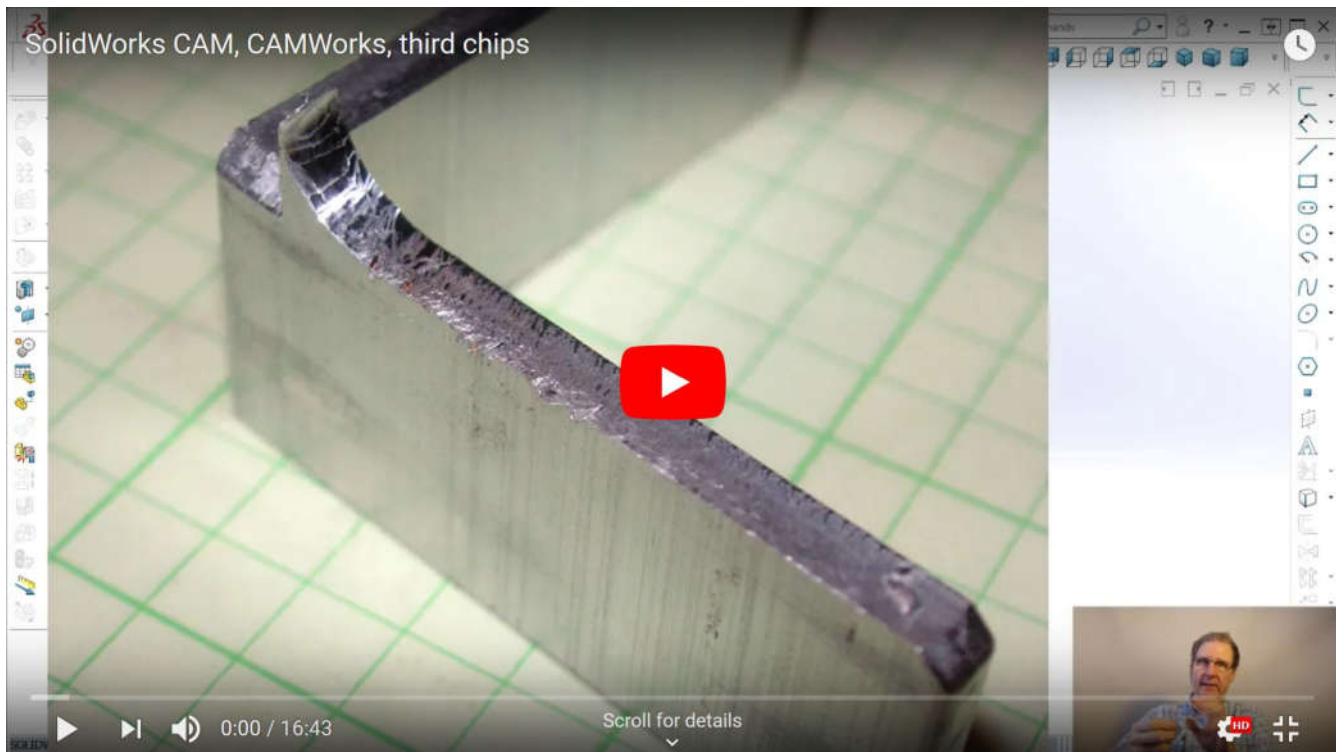




Rako Studios » Media » Suffering-with-software » Solidworks CAM, CAMWorks third chips (youtu.be/ggOiAkrOTOQ)

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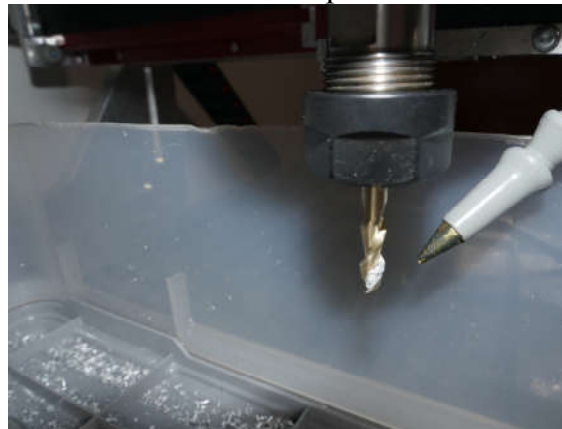
I use SolidWorks CAM by CAMWorks to make more test cuts in aluminum angle, using my Avid Benchtop Pro milling machine.



SolidWorks part file here.
G-code file, (Mach3 no G54) post here.

After forgetting to turn on the Trico MD-1200 coolant systems in the last video, this time I made sure that the micro-drop coolant nozzle was spraying. It did a little better than last time at the 16,000 RPM holes and ellipse, but the tool still loaded up. The tool is getting hotter as it makes these cuts, and I only have one side of the dual Trico setup working. I received the parts for the other side today, and will go about repairing it to use the next time.

With both nozzles spraying, maybe the carbide end mill will not load up like it did this time.



This run I fixed loose and marred vise jaws on the cheap Home Depot drill-press vise.



I used a sharpening stone to flatten the back side of the fixed jaw.



The front side needed some dressing as well.



The movable jaw also needed some touch-up.



The part measured much longer than design intent, 5.020 on the left flange. You can see the divot in the end of the flange where the end mill ran off the part. Measuring to this depression made a slightly better 5.008 length.

There is compliance in the vise, the plastic tub it is mounted on, the base of the mill, the gantry, or all of these. The initial part I made at conservative speeds and feeds was also oversize, by a few thousandths. This might also be a function of the lack of precision in rolled ballscrews.

The high material removal rates are certainly a factor, since the two round holes are also significantly under-size, by 0.005 in the left flange, and 0.003 in the right flange. In that first test part I did with slow speeds and feeds, the one hole was exact to 5 tenths, and the other was 5 tenths under-size. I can live with half-a-thousandth error, but not 20 thousandths.

The plan is to get the Trico coolant system working on both nozzles, get a better vise, and give up on mounting it in a plastic tub. I thought about using the other half of the tub to make a flood coolant setup, but it would be of no use if the machine is not stiff enough to take advantage of fast speeds and feeds.